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滇藏蝠蛾属三新种记述*

(鳞翅目：蝙蝠蛾科)

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摘要 本文记述了分布于云南、西藏高寒草甸区的蝠蛾属3新种：云南蝠蛾*Hepialus yunnanensis* sp. nov.、芒康蝠蛾*Hepialus markamensis* sp. nov.和草地蝠蛾*Hepialus pratensis* sp. nov.

关键词：蝠蛾属，云南蝠蛾，芒康蝠蛾，草地蝠蛾 新种，蝙蝠蛾科

分布于我国西南、西北高寒草甸区的蝠蛾属*Hepialus*昆虫是冬虫夏草菌的寄主。在整理采自滇西北老君山、白马雪山和藏东南芒康尼马沙雪山草甸区的冬虫夏草寄主标本时，经比较研究发现3新种。模式标本均保存在中国科学院昆明动物研究所。

1．云南蝠蛾，新种*Hepialus yunnanensis* **Yang, Li** *et* **Shen** (图1：a—d)

雄蛾：体长13.2—14.8mm；翅展24.5—28.5mm。

雌蛾：体长13.8—15.5mm；翅展25.4—30.0mm。

体小。复眼黑色；触角短小丝状，21节；喙和下唇须短小，周围密被毛。

前翅铁锈色，亚外缘有波纹状白斑。后翅褐色，无斑纹。前后翅的翅缘密生长毛。前翅的翅轭明显；前翅A脉长，达翅后缘；Cup脉短，基部和端部各有一条横脉与A脉相连。后翅Cup脉发达，伸及翅后缘（图1：a）。

前足胫节深黄色，有胫刺（图1：b）；爪弯曲，黄色，有中叶（图1：c）。

雄性外生殖器长形，黄色毛密集覆盖。抱器瓣密生细毛，端部略尖，中部后缩，基部背面凹陷，下端无骨化钩；背兜长，中部起有狭长的锯齿状，端部分为两尖岔，骨化部分黑色。囊形突宽大，上下呈圆弧形（图1：d）。

本种与近似种丽江蝠蛾*Hepialus lijiangensis* Chu *et* Wang的主要区别是：前翅Cup脉基部和端部有横脉与A脉相连；雄性外生殖器长形，背兜中部起有狭长的锯齿状，囊形突下部圆弧形。

正模♂，配模♀，副模2♂♂，1♀。云南省剑川，丽江和兰坪三县交界处的老君山西北坡；北纬26°45′，东经99°51′，海拔3680—3750 m；1990. Ⅴ. 20—24；杨大荣、李朝达、杨宗龙采。

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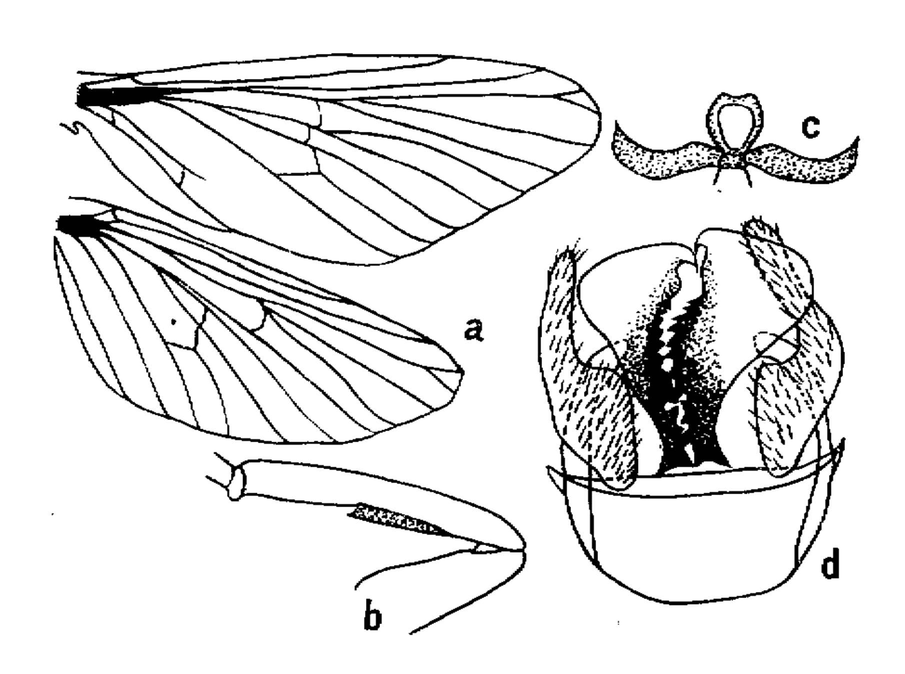


图 1 云南蝠蛾，新种 *Hepialus yunnanensis* sp. nov.
a. 翅脉(wing vein) b. 前足胫节和胫刺(spure on fore tibia)
c. 前足爪中叶(empodium on fore tibia) d.雄性外生殖器后面观(male genitalia caudal aspect)

2. 芒康蝠蛾，新种*Hepialus markamensis* **Yang, Li** *et* **Shen (图 2: a—d)**

雄蛾：体长14.2—15.4mm；翅展30.5—34.4mm。

雌蛾：体长14.6—16.2mm；翅展32.5—36.4mm。

体中型。头密布长毛。复眼黑色；触角丝状23节，具细毛；喙退化，下唇须短小，3 节，周围密被长毛。

前翅淡褐色，具黑色环斑纹；Cup脉短，仅达翅中部，在端部有一横脉与A脉相连；A脉长，达翅后缘。后翅褐色无斑纹，Cup 脉比前翅发达，但未达翅后缘（图2：a)。

前足金黄色，胫节有胫刺（图2：b）；爪弯曲，爪中叶黄色，其边缘有一圈黑色凸起（图2：c）。

雄性外生殖器宽大，背兜中部骨化区黑色，边缘具许多锯齿状小齿；抱器瓣宽，端部椭圆形，中部明显缢缩，下端有一骨化钩；囊形突下部呈圆弧形突起（图2：d）。

芒康蝠蛾与近似种康姬蝠蛾*Hepialus kangdingroides* Chu *et* Wang 不同：前者前翅Cup脉仅有一条横脉与A脉相连，后翅Cup 脉未达翅后缘。雄性外生殖器囊形突下部圆弧形突起。体形大。两者的翅斑纹和颜色也不相同。

正模♂，配模♀，副模2♂♂，5♀♀；西藏自治区芒康县尼马沙雪山，北纬28°59，东经98°46′，海拔4600—4900m；1990. Ⅵ. 12，杨大荣、杨宗龙采。

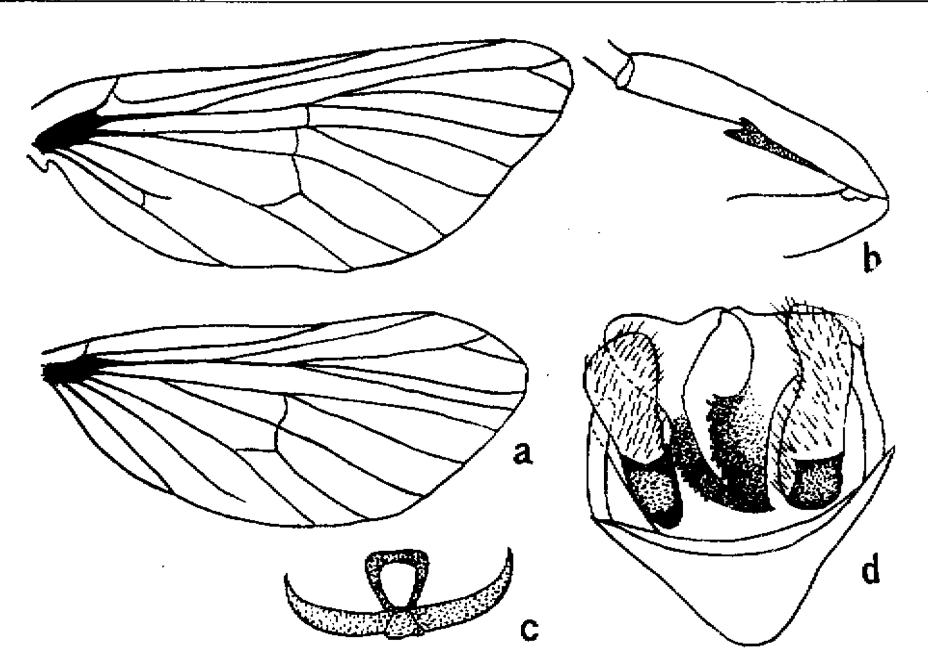


图 2　芒康蝠蛾，新种 *Hepialus markamensis* sp. nov.

a. 翅脉(wing vein)　　b. 前足胫节和胫刺(spure on fore tibia)

c. 前足爪中叶(empodium on fore tibia)　　d. 雄性外生殖器后面观(male genitalia caudal aspect)

3. 草地蝠蛾，新种 *Hepialus pratensis* **Yang, Li** *et* **Shen（图 3：a—d）**

雄蛾：体长15.5—18.2mm；翅展38.8—41.5mm。

雌蛾：体长17.1—19.5mm；翅展42.8—44.0mm。

体中型，灰黑色。头部由白色和灰黑色密毛覆盖，仅露复眼和触角；胸部的腹面和背面由黄褐色长毛覆盖。复眼深黄色；触角丝状，25节，第23节的长度为其他节的 2 倍。下唇须短小，喙和单眼退化。

胸足黄色。前足胫节的胫刺略钝圆，淡褐色（图 3：b）；各足跗节由黑色短毛覆盖；爪弯曲，爪中叶边缘有一圈黑色凸起（图 3：c）。

前翅灰黑色，从翅顶角内的 R_1 脉始至外缘的 M_3 脉间，有一不规则的长形白斑纹，纹边缘由黑色带包围，臀区有两个小白斑纹。前翅Cup脉短，仅达翅中部， Cup 脉在中部有一条横脉与 CuA_2 相连，有两条横脉分别在中部和端部与A脉相连。后翅灰黑色，Cup脉长，几乎达翅后缘（图 3： a）。

雄性外生殖器宽大，抱器瓣粗壮，上部圆形，外端有不规则的瘤状突起，下端有骨化较强的单钩，黑色；背兜中部起骨化较强，黑色，边缘有一列细齿；囊形突上端有一圈深黄色的骨化层，下端椭圆形（图 3： d）。

本新种与分布于同一地区的近似种人支蝠蛾 *Hepialus renzhiensis* Yang不同：草地蝠蛾前翅灰黑色，Cup脉在端部与A脉相连；后翅 R_5 脉与 M_1 脉间有横脉相连。雄性外生殖器抱器瓣外缘有瘤状突起，囊形突上、下缘凸起。

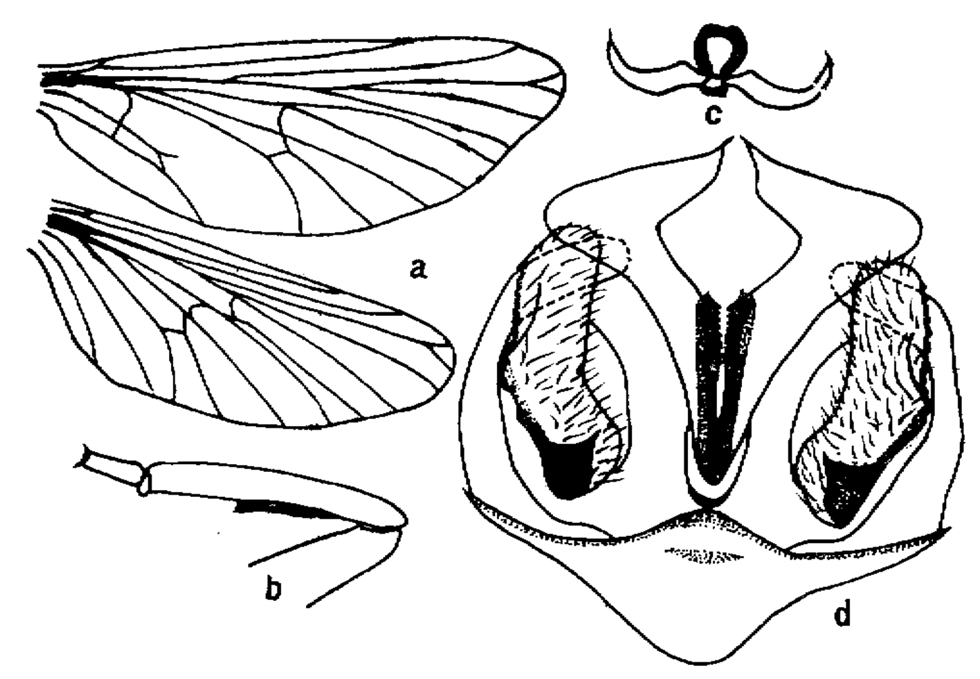


图 3 草地蝠蛾，新种*Hepialus pratensis* sp. nov.

a. 翅脉(wing vein) b. 前足胫节和胫刺(spure on fore tibia)

c. 前足爪中叶(empodium on fore tibia) d. 雄性外生殖器后面观(male genitalia caudal aspect)

正模♂，配模♀，副模3♂♂，5♀♀。云南省德钦县白马雪山，北纬28°23′，东经99°01′，海拔4350 m；1990.Ⅶ.27，杨大荣、鲁自、杨宗龙采。

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THREE NEW SPECIES OF THE GENUS *Hepialus* FROM YUNNAN AND XIZANG, CHINA (LEPIDOPTERA: HEPIALIDAE)

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In the present paper, three species of the genus *Hepialus* are described as new. The types of 3 new species were collected from the snow mountains of alpine meadow. Three species of the larvae can be parasitized by a kind of fungi, *Cordyceps*, to form the Chinese insect herb, a precious ingredient of traditional Chinese medicine. The types of 3 new species are kept in the Kunming Institute of Zoology, Academia Sinica, Kunming, China.

1. *Hepialus yunnanensis* sp. nov. (Figs. 1: a — b)

Body length: ♂ 13.2—14.8mm; ♀ 13.8—15.5mm.

Compound eye dark; antennae filiform, 21 articles; labial palps present, there are tibial spure on fore tibia; wing ferruginous, Cup of forewing short, 2 cross veins present below Cup of forewing at the base and top part. In male genitalia, valvae thiner without tooth, tegumen with many strongly sclerotized area, the teeth in the middle and two teeth forks in the terminale area, saccus ellipticity on above and below margin.

It differs from *H. lijiangensis* Chu *et* Wang: 2 cross veins present below Cup of forewing (Fig. 1: a); the male genitalia, tegumen have many strongly sclertized area the teeth in the middle and two teeth forks in the terminale area, saccus ellipticity on above and below margin (Fig. 1: d).

Holotype ♂, allotype ♀ and paratypes 2♂♂, 1♀, Yunnan: Laojun mountain is the common boundary for Jianchuan and Lijiang and Lanping these three counties, located at 26°45'N, 99°51'E and with an elevation of 3680—3750 metres, 20—24 May, 1990.

2. *Hepialus markamensis* sp. nov. (Figs. 2: a—d)

Body length: ♂ 14.2—15.4mm; ♀ 14.6—16.2mm.

Compound eye dark; antennae filiform, 23 articles; labial palps present and rostrum degenerate; fore tibia golden yellow, there are spurs on fore tibia;

foewing light browm, Cup of forewing short and with one cross vein below it, male genitalia wide and thick, valvae with one tooth at the base part, tegumen with many strongly sclerotized area, the teeth in the middle; saccus projecting on above and below margin.

The differences from *H. kangdingroides* Chu *et* Wang are Cup of forewing with a cross vein below it (Fig. 2 : d).

Holotype♂, allotype ♀, paratypes 2♂♂, 5♀♀; Xizang: Markam county, Nimasha snow mountain, located at 28°59′N, 98°46′E and with an elevation of 4600—4900 metres, 12 July, 1990.

3. *Hepialus pratensis* sp. nov. (Figs. 3 : a—d)

Body length: 15.5—18.2mm; 17.8—19.5mm.

Body colour is black-yollow, there are black and white hairs on the head, antenna filiform, there are 25 segments in the flagelum; forewing colours are greyblack, the outer margin has a white streak and the anal area has two white streaks. The Cup of forewing short, one cross vein present above the Cup of forewing in the middle, 2 cross veins below Cup of forewing in the middle and top part. The male genitalia, valvae thick and with one tooth at the base part and with one tumour at the outer margin, tegumen with many strongly sclerotized area, the teeth in middle, saccus proiecting on the above and below margin.

It differs from *H. renzhiensis* Yang: 2 cross veins below Cup of forewing at the middle and top part (Fig. 3 : a), in male genitalia, the outer margin of valve with one tumour and saccus projecting on the above and below margin (Fig. 3 : d).

Holotype♂, allotype ♀, paratypes 3♂♂, 5♀♀; Yunnan: Deqin county, Baima snow mountain, located at 28°23′N, 99°01′E and with an elevation of 4350 metres, 27 July, 1990.

Key words: *Hepialus, H. yunnanensis, H. markamensis, H. pratensis*